

**SECTION-BY-SECTION SUMMARY OF
H.R. 5356, THE RESEARCH FOR COMPETITIVENESS ACT
AS REPORTED**

SEC. 1. SHORT TITLE

“Research for Competitiveness Act.”

SEC. 2. NATIONAL SCIENCE FOUNDATION EARLY CAREER AWARDS FOR SCIENCE AND ENGINEERING RESEARCHERS

Establishes a program at the National Science Foundation (NSF) to award grants to scientists and engineers at the early stage of their careers at institutions of higher education and research institutions. Allows the existing Faculty Early Career Development (CAREER) Program to be designated as the mechanism for awarding such grants. Sets the duration of the awards to be five years and the amount per year to be at least \$80,000. Eligible applicants are tenure-track faculty at institutions of higher education or the equivalent at research organizations, such as observatories. Requires the award recipients to be selected on a competitive, merit-reviewed basis, based on the intellectual merit of the proposed work; the innovative or transformative nature of the proposed research; the extent to which the proposal integrates research and education, including undergraduate education in science and engineering disciplines; and the potential of the applicant for leadership at the frontiers of knowledge. Requires the Director to allocate at least 3.5 percent of funds appropriated for Research and Related Activities each year to the grants program under this section.

Requires the Director of NSF to provide to Congress within six months a report describing the distribution of the CAREER Program awardees since fiscal year 2001 among different types of institutions. Requires the Director to provide to Congress within two years a report evaluating the impact of the CAREER Program on the ability of young faculty to compete for NSF research grants.

SEC. 3. DEPARTMENT OF ENERGY EARLY CAREER AWARDS FOR SCIENCE AND ENGINEERING RESEARCHERS

Establishes at the Department of Energy Office of Science a program to award grants to scientists and engineers at the early stage of their careers at institutions of higher education and research institutions. Allows the awards to be for up to five years and the amount per year to be at least \$80,000. Eligible applicants are tenure-track faculty at institutions of higher education or the equivalent at research organizations, such as observatories. Requires the award recipients to be selected on a competitive, merit-reviewed basis, based on the intellectual merit of the proposed work; the innovative or transformative nature of the proposed research; the extent to which the proposal integrates research and education, including undergraduate education in science and engineering disciplines; and the potential of the applicant for leadership at the frontiers of knowledge. Requires the Director to give priority to proposals in which the proposed work includes collaboration with a National Laboratory. Authorizes appropriations for the program of \$25,000,000 for each of the fiscal years 2007 through 2011.

Requires the Director of the Office of Science to provide to Congress within three months of enactment a report on efforts to recruit and retain young scientists and engineers at the early stages of their careers at the civilian National Laboratories. The report shall include a description of incentives for recruitment and retention, an evaluation of the effectiveness of the incentives, a description of barriers to recruitment and retention, and the amount and source of funding devoted to recruitment and retention efforts.

SEC. 4. REPORT ON NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY EFFORTS TO RECRUIT AND RETAIN EARLY CAREER SCIENCE AND ENGINEERING RESEARCHERS

Requires the Director of the National Institute of Standards and Technology to provide to Congress within three months of enactment a report on efforts to recruit and retain young scientists and engineers at the early stages of their careers at the National Institute of Standards and Technology. The report shall include a description of incentives for recruitment and retention, an evaluation of the effectiveness of the incentives, a description of barriers to recruitment and retention, and the amount and source of funding devoted to recruitment and retention efforts.

SEC. 5. NATIONAL SCIENCE FOUNDATION RESEARCH AWARD MATCH PROGRAM (originated in H.R. 5357)

Establishes a program at NSF to award grants on a competitive, merit-reviewed basis to scientists and engineers at the early stage of their careers at institutions of higher education and research institutions to conduct high-risk, high-return fundamental research with the potential for significant scientific or technical advancement. Sets the duration of the awards to be up to five years and the amount per year to be up to \$75,000, with an additional \$37,500 available each year as a one-to-one match for funds the awardee raises from industry for the proposed research. Eligible applicants are tenure-track faculty at institutions of higher education or the equivalent at research organizations, such as observatories. Requires the criteria for awardee selection to include the potential of the applicant for leadership at the frontiers of knowledge; the innovative or transformative nature of research in the areas of interest described in the application; the creativity of the applicant; and the potential interest to industry of research in the areas of interest described in the application. Authorizes appropriations for the program of \$3,000,000 for fiscal year 2007; \$6,000,000 for fiscal year 2008; \$9,000,000 for fiscal year 2009; \$12,000,000 for fiscal year 2010; and \$15,000,000 for fiscal year 2011.

SEC. 6. DEPARTMENT OF ENERGY RESEARCH AWARD MATCH PROGRAM (originated in H.R. 5357)

Establishes a program at the Department of Energy Office of Science to award grants on a competitive, merit-reviewed basis to scientists and engineers at the early stage of their careers at institutions of higher education and research institutions to conduct high-risk, high-return fundamental research with the potential for significant scientific or technical advancement. Sets the duration of the awards to be up to five years and the amount per year to be up to

\$75,000, with an additional \$37,500 available each year as a one-to-one match for funds the awardee raises from industry for the proposed research. Eligible applicants are tenure-track faculty at institutions of higher education or the equivalent at research organizations, such as observatories. Requires the criteria for awardee selection to include the potential of the applicant for leadership at the frontiers of knowledge; the innovative or transformative nature of research in the areas of interest described in the application; the creativity of the applicant; and the potential interest to industry of research in the areas of interest described in the application. The Director may give priority to proposals in which the proposed work includes collaboration with the National Laboratories. Authorizes appropriations for the program of \$2,000,000 for fiscal year 2007; \$4,000,000 for fiscal year 2008; \$6,000,000 for fiscal year 2009; \$8,000,000 for fiscal year 2010; and \$10,000,000 for fiscal year 2011.

SEC. 7. MAJOR RESEARCH INSTRUMENTATION

Expands the range of awards under the NSF Major Research Instrumentation Program to be between \$100,000 and \$20,000,000 and allows funding to be used to support the operations and maintenance of instrumentation and equipment acquired under the program. Authorizes appropriations for the program of \$94,200,000 for fiscal year 2007; \$100,800,000 for fiscal year 2008; \$107,800,000 for fiscal year 2009; \$115,300,000 for fiscal year 2010; and \$123,400,000 for fiscal year 2011.

SEC. 8. DONATIONS

Amends the *National Science Foundation Act of 1950* to allow the Foundation to accept donations for specific prize competitions.

SEC. 9. PROGRAM TO FOSTER CROSS-DISCIPLINARY RESEARCH

Establishes a program at NSF to award grants to individuals, groups, and centers for long-term, potentially path-breaking, basic research designed to simultaneously advance the physical and nonbiomedical life sciences. Requires the award recipients to be selected on a competitive, merit-reviewed basis. Requires the review panels to include both physical scientists and nonbiomedical life scientists, and, when appropriate, engineers, and to be open to approving high-risk research. Requires some of the grants awarded under the Early Career Program of Section 2 to be consistent with this section. Authorizes the NSF Director to carry out this program jointly with the Department of Energy Office of Science and other relevant Federal agencies.

SEC. 10. RESEARCH ON INNOVATION AND INVENTIVENESS

Allows NSF to support research on the process of innovation and the teaching of inventiveness.

SEC. 11. NASA'S CONTRIBUTION TO INNOVATION

States the sense of Congress that a balanced science program at the National Aeronautics and Space Administration (NASA) contributes significantly to innovation and the economic

competitiveness of the United States and that NASA shall, within the spending levels authorized in the *NASA Authorization Act of 2005*, fully participate in any interagency efforts to promote innovation and economic competitiveness through scientific research and development.

SEC. 12. NASA WORKFORCE TRAINING

Allows NASA to establish a NASA Academy, which may use online learning techniques, to provide a training program for NASA employees to bridge the gap between the broad-based training provided by universities and the specific scientific and engineering training needed to carry out the NASA missions. Requires the Administrator of NASA to notify Congress within 180 days if the Academy will be established and, if so, to provide a plan for its establishment.

SEC. 13. DEFINITIONS

Defines “Institution of Higher Education” and “National Laboratory” for this Act.